

REMARKS

In an Office Action mailed on February 25, 2009, claims 1, 6-7, 22-23, 25 and 42 and 44-45 were rejected under 35 U.S.C. § 102(b) as being anticipated by Lebourg; claims 1, 6-7, 17-18, 22-23, 25, 27-28, 30, 33, 35, 42 and 44-45 were rejected under 35 U.S.C. § 102(b) as being anticipated by Slagle; claims 3, 34 and 43 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Slagle in view of Arnold; and claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Slagle in view of Markel.

As amended, the controlled debris perforating system of claim 1 includes a shaped charge that includes a charge case that has a wall that defines a recessed region. The shaped charge includes an explosive material, which is received in the recessed region and a liner that is disposed in the charge case. The charge case defines at least one axially oriented slot in the wall about which the charge case is adapted to fracture in response to detonation of the explosive material.

Because the limitations of claim 3 have been incorporated into independent claim 1, the § 103 rejection of claim 3 as being unpatentable over Slagle in view of Arnold is addressed below. It is noted that claims 1 and 42 overcome the § 102 rejections in view of Lebourg for at least the reason that Lebourg fails to disclose a combination of features that include a charge case that defines at least one axially oriented slot in a wall that defines a recessed region, which receives an explosive material.

To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed, including determining the scope and content of the prior art, and ascertaining the differences between the prior art and the claims at issue. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). Moreover, as the U.S. Supreme Court held, it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007).

Contrary to amended independent claim 1, Slagle discloses a charge lid 40 of a shaped charge, which has a radially-disposed score line 47. The charge lid 40 is initially attached to a carrier 12. As stated in Slagle, the purpose of the score lines 47 is to cause the part of the charge lid 40, which is in contact with a housing 34 of the shaped charge to break off when the

explosive detonates. Slagle, 4:16-21. Slagle states that the remainder of the lid 40 remains fastened to the carrier 12 after detonation of the charge. Slagle, 4:20-22.

Slagle fails to disclose the claimed combination of features, including an axially oriented slot that is disposed in a wall that defines a recessed region that receives an explosive material. In this regard, the score line 47 is located in the charge lid 40 and not in the main housing 34, which receives Slagle's explosive and liner. Fabricating a slot in this region of Slagle's housing 34 would serve no purpose in detaching the portion of the lid 40 that is attached to the housing 34. As such, one of skill in the art in possession of Slagle would not have been led to form an axially oriented score line in Slagle's charge lid 40 or in Slagle's main housing 34.

The secondary reference, Arnold, is directed to forming fragments when a military weapon, such as a hand grenade or bomb, explodes. There has been no reason given by the Examiner why one of skill in the art in possession of Slagle and Arnold would have formed an axially oriented score line in the housing 34 of Slagle's shaped charge. Slagle's shaped charge is neither a military weapon nor would an axially oriented score line aid in detaching the portion of Slagle's charge lid 40 that is attached to the shaped charge housing 34. "Obviousness cannot be predicated on what is unknown." *In re Spormann*, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966). Rather, the Examiner must provide at least a plausible explanation as to why one of skill in the art would have combined the cited references in the same manner that the claimed invention does. As no such showing has been made, Applicant respectfully submits that amended independent claim 1 is neither anticipated nor rendered obvious by the cited references.

For similar reasons, independent claims 17, 33 and 42 are patentable in view of the cited art. In this regard, for at least the reasons that are set forth above, neither Slagle, Lebourg, nor Arnold, whether considered alone or in combination, discloses or renders obvious a combination of features, which include providing a shaped charge that includes a charge case that has a wall defining a recessed region to receive an explosive material and defines at least one axially oriented slot in the wall about which the charge case is adapted to fracture in response to detonation of explosive material (claim 17); providing a shaped charge including a charge case that has a wall defining a recessed region in which an explosive is received and which defines at least one axially oriented groove in the wall about which the charge case is adapted to fracture in response to detonation of the explosive (claim 33); or a shaped charge including a charge case that has a wall defining a recessed region to receive explosive material and defines at least one

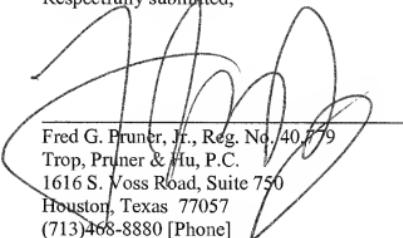
axially oriented slot in the wall about which the charge case is adapted to fracture in response to detonation of the explosive material (claim 42).

Dependent claims 6, 7, 18, 19, 23, 25, 28, 30, 35 and 43-45 are patentable for at least the reason that these claims depend from allowable claims for the reasons that are set forth above.

CONCLUSION

In view of the foregoing, Applicant respectfully requests a favorable action in the form of a Notice of Allowance. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-1504 (SHL.0227US).

Respectfully submitted,



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